Exhibit A

FINAL
CLEANUP ACTION PLAN
(CAP)

For the Former

PRICELESS GAS

1110 Morgan Street
Davenport, Washington

JUNE 2003

Washington State Department of Ecology

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FINAL CLEANUP ACTION PLAN
PRICELESS GAS SITE

1.0 INTRODUCTION

This Final Cleanup Action Plan (CAP) has been prepared for the former Priceless Gas, a leaking underground storage tank (LUST) site, located at 1110 Morgan Street, Davenport, Washington. (See Site Map, Figures 1 and 2)

The CAP is a required element of the site cleanup process as provided for under the Model Toxics Control Act Cleanup Regulation (MTCA), Chapter 173-340 WAC. This CAP describes the selected cleanup action for the site and provides an opportunity for public review and comment. The specific requirements of the CAP are described in WAC 173-340-380(1) and (2). An outline of these requirements is provided in Table 1.

The preparation of the CAP is one step in a process that documents the progress of a site investigation and cleanup. The cleanup actions selected are based upon a review of site investigation reports and the regulatory requirements of MTCA.

1.1 DECLARATION

Ecology has determined that the selected final cleanup action will be protective of human health and the environment. As provided for under RCW 70.105D.030(1)(b), Ecology has given preference to those remedial actions that provide a permanent solution.

1.2 APPLICABILITY

The cleanup levels described in this cleanup action plan were developed specifically for the Priceless Gas Site. The cleanup levels were developed as an integral part of the selected remedial actions for this site and should not be considered to be applicable to other sites.

1.3 ADMINISTRATIVE RECORD

Reports and documents that were considered in the development of this cleanup action plan are on file in the administrative record for the Site. Specific investigative reports and other significant documents are identified in the reference section. The complete administrative record for the Site is available for public review by appointment at Ecology's Eastern Regional Office, located at 4601 N. Monroe Street, Spokane, WA 99205-1295.

1.4 PREVIOUS WORK

The CAP provides a description of the Priceless Gas facility and an historical review of activities at the Site. Also, previous investigative work is summarized and referenced as part of the CAP. Investigative and interim action reports reviewed in the preparation of this document include the following:

- Remedial Investigation / Feasibility Study - Priceless Gas (Sheila Pachernegg, 2001)
- Remedial Investigation – Priceless Gas (Sheila Pachernegg, 2000)
- Site Investigation, UST Removal and Remedial Activities Report – Priceless Gas (Olympus Environmental, 1999)
- Remedial Investigation / Feasibility Study – Corner Express (Budinger and Associates, 2002)

2.0 SITE BACKGROUND

2.1 SITE HISTORY

The site of the former Priceless Gas is located at 1110 Morgan Street in Davenport, Washington, within Lincoln County, approximately 30 miles west of Spokane. The site is located on the northwest corner of Morgan Street (Highway 2) and 11th Street. It is bounded by Morgan Street on the south and 11th Street on the east. (See Site Map, Figure 1).

The facility was most recently operated as a retail service station and convenience store by Merit Truck Stop, Inc. (Merit) / F.O.F. Inc. Merit is represented by Mr. Peter Hirschburg. The facility was closed in June 1998 with the operational closure of the four underground storage tanks (UST). The four USTs consisted of: one 12,000-gallon capacity unleaded gasoline tank; one 10,000-gallon diesel tank; one 3,000-gallon premium gasoline tank; and one 3,000-gallon regular gasoline tank.

On November 13, 1998, Ecology's Emergency Spill Response Team personnel responded to a call from Bruce Dehn, the owner of a residence located directly north of the Priceless Gas facility. Mr. Dehn was concerned with an apparent gasoline odor in his home and stated that gasoline product was seeping through the rock wall of his basement.

Subsequent investigations confirmed that there had been a release(s) from the UST system at the Priceless Gas site. It was also determined that the Priceless Gas site was a source of the gasoline-contaminated groundwater infiltrating the basement of the Dehn residence.

As part of an independent action in December 1998, Merit provided for the decommissioning and removal of all of the USTs. In January 1999, all of the pumps and associated product piping were removed. Along with the UST system removal, several hundred cubic yards of petroleum-contaminated soil was removed from the site.

By a letter dated January 22, 1999, Ecology issued a proposed finding of potential liability status to Merit Truck Stop, Inc. as provided for under MTCA. A letter of response to this proposed finding was submitted to Ecology by Peter Hirschburg on behalf of Merit.

In a letter dated March 30, 1999, Ecology acknowledged Mr. Hirschburg's response and notified Merit of their final status as a "potentially liable person" (PLP) as provided for under RCW 70.105D.040.

Ecology issued Enforcement Order No. DE 99-TC-E102, effective June 29, 1999, directing Merit to conduct specific remedial actions in response to the release at the Priceless Gas site. The Order directed Merit to provide for a Remedial Investigation/Feasibility Study (RI/FS) regarding the confirmed release.

The RI, along with earlier interim actions, included: the installation of seventeen (17) soil borings, ten (10) of which were developed into monitoring wells; four (4) separate tank excavations; approximately ten (10) backhoe trenches; soil sampling from each of the trenches, soil borings and tank excavations; groundwater sampling from the tank excavations and each of the monitoring wells; and the removal of approximately 700 cubic yards of petroleum-contaminated soil.

The Final RI/FS Report was received by Ecology on April 9, 2001. The RI/FS identified petroleum contaminated soils and contaminated groundwater associated with a release(s) from the Priceless Gas Site. It also suggested that there may be off-site, hydraulically upgradient, sources that have contributed to the groundwater contamination.

2.2 SITE INVESTIGATIONS

There have been two formal investigations at this site related to the suspected, and later confirmed, release(s) of petroleum product (gasoline). The initial investigation was in response to the emergency represented by the report of gasoline vapors and gasoline-contaminated groundwater seeping into the basement of a private residence. This initial investigation included Ecology's first response and subsequent remedial actions taken prior to the RI/FS. This phase of work is documented in a report titled " Site Investigation, UST Removal and Remedial Activities Report – Priceless Gas" (Olympus Environmental, 1999).

The RI/FS was conducted in response to an Ecology enforcement order issued under the authority of MTCA. The investigation served to characterize the nature and extent of soil and groundwater contamination originating from release(s) at the site and to identify and

evaluate appropriate cleanup strategies. The RI/FS Report provides a comprehensive documentation of the work completed at the site, including the initial response.

2.2.1 Site Investigation, UST Removal and Remedial Activities Report

On November 13, 1998, Ecology's Emergency Spill Response Team personnel responded to a call from the homeowner (Bruce Dehn) adjacent to the Priceless Gas property regarding gasoline vapors in his home and possible gasoline product seeping through the rock wall in his basement. Ecology initiated an emergency investigation to determine the source of the petroleum. Four USTs at the Priceless Gas site were inspected and all remaining product was pumped out by Ecology's contractor.

During the emergency response, a test pit was dug on the Priceless Gas property just north of a 10,000-gallon diesel UST and a 12,000-gallon unleaded gasoline UST. Another test pit was excavated directly north of the Priceless Gas site at the south edge of the resident's property. Analytical results of the soil samples obtained from each of the excavations confirmed diesel and gasoline contamination above MTCA Method A Cleanup levels for total petroleum hydrocarbons (TPH) and gasoline constituents benzene, toluene, ethylbenzene and xylenes (BTEX).

On November 25, 1998, Olympus Environmental installed two monitoring wells at the residential property. Groundwater samples obtained from the monitoring wells identified TPH and BTEX contamination above MTCA Method A Cleanup levels.

The decommissioning and removal of the USTs was completed in December 1998. The pumps and piping were removed in January 1999. Soil samples obtained from each of the UST excavations identified TPH and BTEX contamination above MTCA Method A Cleanup levels, confirming a release(s) from the UST system.

In a letter dated March 30, 1999, after considering Mr. Hirschburg's response to Ecology's proposed finding of PLP status, Ecology notified Merit of their final status as a "potentially liable person" (PLP) as provided for under RCW 70.105D.040.

2.2.2 Remedial Investigation / Feasibility Study

In June 1999 Ecology issued Enforcement Order No. DE 99-TC-E102 directing Merit Truck Stop, Inc. to complete an RI/FS.

The purpose of the RI/FS was to define and characterize the contamination associated with the site and to develop and evaluate cleanup options. The completed RI/FS report dated April 9, 2001 documents the investigation and findings.

The RI concludes, in part, that petroleum contamination as gasoline and to a lesser extent, diesel, impacts the soil and groundwater at this site. The petroleum contamination is the

result of a release(s) from the UST system. The investigation also indicates that contamination from this site is responsible for the gasoline-contaminated groundwater that impacted the adjacent residence in 1998.

The RI also found that groundwater contamination has migrated off-site as evidenced by dissolved gasoline constituents in two hydraulically downgradient monitoring wells (MW-4 and MW-6). Cottonwood Creek, located approximately 500 feet north and downgradient of the site has apparently not been impacted as evidenced by groundwater samples taken from MW-10 located adjacent to the creek (See Figure 2).

Gasoline, as free-phase product, was found in an upgradient monitoring well (MW-3), suggesting an off-site source may be a significant contributor to the groundwater contamination. The former Corner Express (Texaco), located immediately to the south and apparently upgradient seemed a likely source. However, a subsequent analysis of the gasoline found in MW-3 identified characteristics significantly different than what was found at either the Corner Express or the Priceless Gas site. It is possible that the product in this well may have originated from an as yet unidentified source. Utility lines, including water and sewer lines are located within 20 feet of this well and represent a potential transport pathway for an as yet unidentified source of contamination. There is a recent history of leaks and repairs of these lines. Regardless, the gasoline found in this well apparently affects a very limited area and does not appear to be the result of an active source.

2.2.3 Other Investigations

The former Corner Express, referenced above, was the subject of an Ecology emergency enforcement order in December 2000. This order was issued, in part, due to the discovery of free-phase gasoline in MW-3 and concerns with the status of the USTs at the Corner Express site. The order directed Marvin Bain, the owner of the site, to provide for the emptying of the UST system; a complete inspection and testing of each UST system component and a site assessment.

2.3 PHYSICAL SITE CHARACTERISTICS

2.3.1 Topography and Climate

The surface topography of the Site itself is nearly flat, in part due to historical backfilling and leveling of the property associated with the commercial development. However, the general area is characterized by a gentle but obvious slope towards Cottonwood Creek, approximately 500 feet to the north. The surface topography indicates a north trending drainage pattern towards the creek with a drop in surface elevation of approximately 18 feet from the Priceless Gas site to Cottonwood Creek (See Figure 2).

A storm water drainage system directs discharge waters to the north of the site, where they eventually flow into the creek. Excess storm water, not captured by the drainage system, flows towards the creek. As a result, the flow of the creek responds quickly to individual storm events and seasonal weather patterns.

This area receives approximately 15 inches of precipitation annually. Approximately 12 inches of precipitation falls between October and March, with nearly half of that falling as snow. Winters are cool and damp, and summers are generally warm and dry.

2.3.2 Regional Geology and Soils

The bedrock in this region consists predominantly of a sequence of basalt flows known as the Columbia River Group. The upper part of this basalt group is known as the Wanapum Formation. Basalt bedrock extends to a depth of several hundred feet to several thousand feet in this region. The shallow basalt is predominantly weathered and fractured, becoming more dense and competent with depth. Basalt across this site is encountered from the near surface to approximately 12 feet below ground surface (bgs).

The soil horizon at this Site is thin, typically 2 to 12 feet in depth, and comprised of native and non-native materials primarily sand, gravel and silt. Site development activities have disturbed most of the soils in the immediate area. The former tank beds extend to a depth of 8-12 feet bgs. The deepest soils on-site are in the area along the northern perimeter of the property where the two largest USTs were located. The petroleum-contaminated soil from each of the tank beds has been removed, treated off-site and replaced with clean backfill material.

2.3.3 Hydrogeology

There are several significant, hydraulically distinct, aquifers within the Columbia River Basalt. Aquifers are typically found at or near the interface of individual basalt flows where soil deposition, weathering and fracturing of the basalt has occurred. The density and thickness of individual basalt flows has resulted in generally low vertical hydraulic conductivity values, characteristic of confined aquifer systems. However, there is evidence of localized occurrences where vertical fracturing within individual basalt units significantly increases the vertical conductivity resulting in unconfined aquifer conditions.

At this site and the near vicinity, the basalt bedrock surface dips generally to the north. The basalt surface is weathered and irregularly fractured. Features within the fractured basalt are a controlling mechanism on the behavior of the shallow unconfined aquifer.

During times of high groundwater, typically late fall and spring, the water table rises above the basalt surface and into the shallow soils. At these times groundwater flow patterns are influenced by the inherent characteristics of the shallow soils. The soils

throughout the area of concern are a heterogeneous mix of silt, sand and gravel, mostly disturbed native soils, and backfill material. There were ten monitoring wells installed as part of the RI. Static water levels measured in these monitoring wells range from approximately 3 feet to 15 feet bgs. Seasonal fluctuation in the water levels has been measured at up to 15'.

Groundwater flow direction at this site is generally to the north-northeast, towards Cottonwood Creek. However, the groundwater flow characteristics and contaminant transport mechanisms are significantly affected by the seasonal changes in the water table elevation.

2.3.4 Surface Water

Cottonwood Creek is approximately 500 feet north, hydraulically downgradient of the Site. This is the nearest potential surface water receptor. There is clear evidence of hydraulic continuity between the creek and the shallow groundwater table with the groundwater likely contributing to the flow of the creek in this area.

3.0 NATURE AND EXTENT OF CONTAMINATION

3.1 SOIL

The contamination of the soils in the area of this site is in part a direct result of releases from the UST system. Contact with contaminated groundwater represents a secondary source of contamination for some of the shallow soils. In this case the soils have been impacted by direct contact with contaminated groundwater as it rises into the soil column during seasonal and storm related fluctuations of the water table. As the water table falls, some of the petroleum constituents have adhered to the soil, in effect contaminating soils above the saturated zone.

Remedial actions at the site have included the removal of over 725 cubic yards of petroleum-contaminated soil. The RI demonstrates that most of the petroleum contaminated soil at the site has been removed with the remaining contamination limited to those soils that are impacted by fluctuations in the water table.

As a result of the site work associated with the UST removals, building demolition and the excavation of contaminated soils, the ground surface is mostly compacted backfill material.

3.2 GROUNDWATER

Petroleum-contaminated groundwater extends across this site and to the north towards Cottonwood Creek. The groundwater contamination is primarily the result of the release of petroleum products, both gasoline and diesel, from the former UST system.

Priceless Gas is located northeast and hydraulically downgradient from the former Corner Express facility. There have been confirmed releases/leaks from the UST system at Corner Express site and the facility is a documented source of groundwater contamination as gasoline. An RI/FS for this site has been conducted pursuant to Ecology enforcement orders issued under the authority of MTCA. An enforcement order was issued in January 2003 directing the implementation of a final cleanup action plan for the Corner Express site.

The RI for the Corner Express site indicates that it has been a contributing source of groundwater contamination, as gasoline, in this area. The RI confirms that gasoline contaminated groundwater has, in fact, migrated off-site and is now co-mingled with the southern portion of the contaminant plume at the Priceless Gas site.

Analysis of the chromatograms was performed for groundwater samples taken from the wells at the Corner Express Site and the Priceless Gas Site. The analyses identify distinctive contaminant characteristics in each of the monitoring wells. This information assists in differentiating between the likely sources of groundwater contamination in each of the monitoring wells. Groundwater contaminant signatures associated with the Corner Express site are identified in monitoring wells, specifically Corner Express MW-30 and Priceless Gas MW-8. Groundwater in monitoring wells further downgradient from the Corner Express site does not exhibit contaminant signatures readily attributable to the Corner Express site. This suggests that contamination from the Corner Express site has impacted the southernmost portion of the Priceless Gas site. It is not clear that this offsite source has had impacts much further north than Corner Express MW-30.

3.3 SURFACE WATER

The surface water of Cottonwood Creek has not been sampled. The RI included the installation of a monitoring well immediately upgradient of the Creek. Sampling of that monitoring well, MW-10, has demonstrated that groundwater immediately upgradient and tributary to the Creek has not been impacted.

3.4 RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

Concerns associated with the contamination originating at this Site are generally a function of the shallow depth of the impacted groundwater and contaminated soils. Sensitive potential receptors include Cottonwood Creek. Potential human exposure scenarios include dermal exposure through direct contact with affected media and inhalation hazards associated with vapor pathway migration of volatile organics.

There are no domestic water wells located hydraulically downgradient between this site and Cottonwood Creek. The only known water well in the immediate area is a shallow hand-dug irrigation well located approximately 400 feet southwest and upgradient of the site. This well has not been impacted.

The Dehn family occupies a residence located approximately 50 feet north, and generally downgradient, of the Site. In November 1998 the Dehn residence was affected by gasoline vapors in the basement. Gasoline vapors infiltrated into the basement along with gasoline contaminated groundwater. The cause of the incident has since been determined to be a release(s) from the UST system at the Priceless Gas site. This was the only residence affected. Emergency interim actions served to resolve the situation.

Emergency interim actions have included the removal of all the USTs at the Priceless Gas site and the removal of over 725 cubic yards of gasoline-contaminated soils.

The incident at the Dehn residence coincided with a time of high groundwater levels. Ecology has not received any recent reports of gasoline vapors at the residence, even though there have been recurring high groundwater events.

Although there have been no reports of recurring problems at the residence, it is clear that the potential for contaminated groundwater to significantly impact this residence needs to be considered. The potential impacts include the risk associated with the inhalation of volatile organics as well as an explosion hazard.

Ecology anticipates that the proposed cleanup actions will ultimately resolve any remaining concerns with the contamination originating at this Site. Relevant considerations in evaluating the remaining concerns at this Site include the following:

- Contaminated soils associated with the Priceless Gas site continue to be a source, albeit minor source, of groundwater contamination.

- Residual groundwater contamination does not pose a threat to any known domestic water source. There are no known appropriative uses of the shallow aquifer in the near vicinity.

- There is a reduced but still notable potential of a vapor inhalation hazard. This risk has been substantially mitigated by interim cleanup actions completed shortly after the initial reports of vapors at the nearby residence.

- Exposure through direct contact is a concern due to the lack of any cover over the affected area, and the shallow contaminated soils and groundwater. Any future plans for site activities will need to be considerate of the potential for exposure.

4.0 CLEANUP STANDARDS

MTCA requires the establishment of site-specific cleanup standards. Two primary components of these cleanup standards are cleanup levels and points-of-compliance. Cleanup levels establish the concentration at which a contaminant of concern does not pose a threat to human health or the environment. Contaminated media that exceed the established cleanup level are the subject of selected remedies that serve to prevent exposure to the contaminant. Points of compliance are strategically selected locations within the affected or potentially affected area where cleanup levels must be met.

4.1 OVERVIEW

The process for establishing cleanup levels includes the following:

- Determining the appropriate method for establishing cleanup levels;
- Developing cleanup levels for individual contaminants of concern for each affected media;
- Determining which contaminants are most significant in terms of potential risk in each media;
- Selecting appropriate cleanup levels based on the evaluated risks

The MTCA Cleanup Regulation provides three options for determining appropriate cleanup levels: Methods A, B, and C. These options are to be evaluated with regard to the following considerations:

- Method A may be used to establish cleanup levels at routine sites with relatively few contaminants of concern.
- Method B is the standard method for determining appropriate cleanup levels and may be applied at any site.
- Method C is a conditional method used when a cleanup under Method A or B is technically impossible to achieve or when the application of those cleanup levels does not adequately address the environmental concerns. Method C may also be applied at qualifying industrial sites.

The MTCA Cleanup Regulation describes the factors to be considered in determining whether a particular substance should be used as an indicator for a site. Ecology may eliminate from consideration those substances that are deminimis contributors to the overall threat to human health and the environment. WAC 173-340-703(2) provides that a substance may be eliminated from further consideration based on the following:

- The toxicological characteristics of the substance, which determine the likelihood that it will have significant adverse affects on human health or the environment;
- The chemical and physical characteristics of the substance which determine how persistent it may be under the known environmental conditions;

- The natural background concentration level of the substance;
- The frequency of detection.

4.2 SITE CLEANUP LEVELS

The RI has documented soil and groundwater contamination associated with a release from the UST system at this site. Cleanup levels have been developed for each of these affected media.

4.2.1 Soil Cleanup Levels

Soil cleanup levels have been established for the site using MTCA Method A as provided for in WAC 173-340-740(2). This method was determined to be consistent with WAC 173-340-704 (1) which provides that MTCA Method A cleanup levels are appropriate for those sites with few hazardous substances, undergoing a routine cleanup action as defined in WAC 173-340-200.

Cleanup levels have been defined for the gasoline constituents Benzene, Toluene, Ethylbenzene, Xylenes and MTBE. Method A cleanup levels will also be applied to total petroleum hydrocarbons(TPH) occurring as gasoline and diesel.

CONSTITUENT	CLEANUP LEVEL SOIL	SAMPLE RESULTS FROM RI
BENZENE	0.03	ND – 7.08
TOLUENE	7	ND – 52.7
ETHYLBENZENE	6	ND – 36
XYLENES	9	ND – 170
MTBE	0.10	ND – 5.74
TPH(G)	30	ND - 1,730
TPH(D)	2,000	ND – 111

NOTE: **All values in mg/kg (ppm)**

4.2.1.1 Points of Compliance - Soil

The point of compliance for meeting soil cleanup levels at this site was selected on the basis of the provisions of WAC 173-340-740(6). The point of compliance for soils is the entire site.

4.2.2 Groundwater Cleanup Levels

Groundwater cleanup levels have been established for the site using MTCA Method A as provided for in WAC 173-340-720(3). Although the groundwater in this area is an unlikely source of potable groundwater, Ecology has chosen to apply the more conservative cleanup values defined under Method A. The conservative approach was selected out of consideration of the potential threat to Cottonwood Creek and historical problems with increased exposure risk due to the high groundwater conditions.

CONSTITUENT	CLEANUP LEVEL GROUNDWATER	SAMPLE RESULTS FROM RI
BENZENE	5	4.81 – 41,800
TOLUENE	1,000	.624 – 3,730
ETHYLBENZENE	700	ND - 2,040
XYLENES	1,000	ND - 5,740
MTBE	20	154 – 2,750
TPH(G)	800	ND - 41,800
TPH(D)	500	ND - 4,540

NOTE: **All values in ug/liter (ppb)**

4.2.2.1 Points of Compliance – Groundwater

The points of compliance for meeting groundwater cleanup levels at this site were selected on the basis of the criteria specified in WAC 173-340-720(8). The points of compliance are MW-1, MW-2, MW-3, and MW-6.

5.0 CLEANUP ACTION SELECTION

5.1 REMEDIAL ACTION OBJECTIVES

The remedial action objectives describe the actions necessary to protect human health and the environment through eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route. These objectives are developed by evaluating the characteristics of the contaminated medium, the characteristics of the hazardous substances present, migration and exposure pathways, and potential receptor points.

Shallow soils and groundwater have been contaminated as a result of past releases at the site. People are typically exposed to contaminated soils and groundwater by ingestion, inhalation of volatile constituents, or dermal contact. Potential populations include on-

site workers, trespassers, residents of nearby neighborhoods, passersby, and off-site workers.

Recent interim actions have served to mitigate the potential risks at this site. Primary to this mitigation has been the closure of the UST system, the removal of all stored petroleum products and the removal of over 725 cubic yards of petroleum-contaminated soil. The remaining potential risks and exposure pathways are reflected in the remaining remedial action objectives for the Site:

- Institute and maintain institutional controls to prevent human contact with petroleum-impacted soils or remove these soils for off-site treatment if adequate controls cannot be maintained;
- Prevent further contamination of groundwater;
- Prevent further off-site migration of petroleum contaminated groundwater;
- Prevent human contact with contaminated groundwater by maintaining appropriate controls.

5.2 CLEANUP ACTION ALTERNATIVES

There were five cleanup action alternatives considered in the Feasibility Study for this Site. Each of the alternatives was scored and ranked. Each of the alternatives considered a combination of remedial actions consisting of the following elements:

- Site grading/compaction
- Product recovery at MW-3
- Institutional controls
- Long-term groundwater monitoring
- Soil removal and off-site treatment
- Groundwater treatment trench along north property boundary
- Elimination of the basement at the nearby residence
- Subsurface drainage controls from the area of MW-3 – to treatment trench

Cleanup Alternative Strategies

Cleanup Strategy Elements	Alternatives 1	2	3	4	5
Site Grading /Compaction	X	X	X	X	X
Product Recovery at MW-3	X	X	X	X	X
Institutional Controls	X	X	X	X	X
Long-Term G/W Monitoring	X	X	X	X	X
Soil Removal / Off-Site Treatment		X	X	X	X
G/W Treatment Trench Along North Property Boundary			X	X	X
Elimination of Residential Basement		X		X	
Subsurface Drainage Controls - MW-3 to Treatment Trench					X

Alternative 1: Site grading/compaction; product recovery at MW-3; institutional controls; groundwater monitoring

Alternative 2: Soil removal (associated with construction); site grading/compaction; product recovery sump at MW-3; institutional controls; groundwater monitoring; elimination of the residential basement

Alternative 3: Soil removal (associated with construction); site grading/compaction; product recovery sump at MW-3; institutional controls; groundwater monitoring; groundwater treatment (within trench along north property boundary)

Alternative 4: Soil removal (associated with construction); site grading/compaction; product recovery sump at MW-3; institutional controls; groundwater monitoring; groundwater treatment (within trench along north property boundary); elimination of the residential basement

Alternative 5: Soil removal (associated with construction); site grading/compaction; product recovery system at MW-3; institutional controls; groundwater monitoring; subsurface drainage controls (extending from MW-3 to trench at north property boundary); groundwater treatment (within trench along north property boundary)

5.3 REGULATORY REQUIREMENTS

The MTCA Cleanup Regulation sets forth the minimum requirements and procedures for selecting a cleanup action. A cleanup action must meet each of the minimum

requirements specified in WAC 173-340-360(2), including certain threshold and other requirements. These requirements are outlined below.

5.3.1 Threshold Requirements

WAC 173-340-360(2)(a) requires that the cleanup action shall:

- Protect human health and the environment;
- Comply with cleanup standards (*see Section 4.0)*;
- Comply with applicable state and federal laws *(see Table 3 and Section5.4.1.3)*
- Provide for compliance monitoring.

5.3.2 Other Requirements

In addition, WAC 173-340-360(2)(b) states that the cleanup action shall:

- Use permanent solutions to the maximum extent practicable;
- Provide for a reasonable restoration time frame; and
- Consider public concerns

WAC 173-340-360(3) describes the specific requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable. A permanent solution is defined as one where cleanup levels can be met without further action being required at the Site other than the disposal of residue from the treatment of hazardous substances.

To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, a disproportionate cost analysis is conducted. This analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors, including:

- Protectiveness of human health and the environment;
- Permanent reduction of toxicity, mobility and volume of contaminants(s);
- Cost of implementation;
- Long-term effectiveness;
- Management of short-term risks;
- Technical and administrative implementability; and
- Consideration of public concerns.

The comparison of benefits and costs may not always be easily quantified and will often require the use of best professional judgment.

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame. This evaluation requires some very site specific considerations.

5.3.3 Groundwater Cleanup Action Requirements

At sites with contaminated groundwater, WAC 173-340-360(2)(c)(i) provides that a permanent cleanup action shall be used to achieve the cleanup levels wherever practicable.

5.3.4 Cleanup Action Expectations

WAC 173-340-370 sets forth the following expectations for the development of cleanup action alternatives and the selection of cleanup actions. However, Ecology recognizes that there may be some sites where cleanup actions conforming to these expectations are not appropriate.

- Treatment technologies will be emphasized at sites with liquid wastes, areas with high concentrations of hazardous substances, or with highly mobile and/or highly treatable contaminants;

- To minimize the need for long-term management of contaminated materials, hazardous substances will be destroyed, detoxified, and/or removed to concentrations below cleanup levels throughout sites with small volumes of hazardous substances;

- Engineering controls, such as containment, may need to be used at sites with large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable;

- To minimize the potential for migration of hazardous substances, active measures will be taken to prevent precipitation and runoff from coming into contact with contaminated soils or waste materials;

- When hazardous substances remain on-site at concentrations which exceed cleanup levels, they will be consolidated to the maximum extent practicable where needed to minimize the potential for direct contact and migration of hazardous substances;

- For sites adjacent to surface water, active measures will be taken to prevent/minimize releases to that water; dilution will not be the sole method for demonstrating compliance;

- Natural attenuation of hazardous substances may be appropriate at sites under certain specified conditions [see WAC 173-340-370(7)]; and

- Cleanup actions will not result in a significantly greater overall threat to human health and the environment than other alternatives.

As provided under WAC 173-340-370(7), natural attenuation of hazardous substances may be appropriate at sites where:

- Source control (including the removal and/or treatment of hazardous substances) has been conducted to the maximum extent practicable;
- Leaving contaminants on-site during restoration time does not pose an unacceptable threat to human health or the environment;
- There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the site; and
- Appropriate monitoring requirements are conducted to ensure that the natural attenuation process is taking place and human health and the environment are protected.

5.3.5 Applicable or Relevant and Appropriate Requirements

WAC 173-340-710(1) requires that all cleanup actions comply with all applicable state and federal law. It further states that the term "applicable state and federal laws" shall include legally applicable requirements and those requirements that the department determines "...are relevant and appropriate requirements." In addition, local permitting requirements are to be considered in selecting cleanup requirements. If other requirements are identified at a later date, they will be applied to the cleanup actions at that time.

MTCA provides an exemption from the procedural requirements of several state laws and from any laws authorizing local government permits or approvals for remedial actions [RCW 70.105D.090]. In some cases, however, the substantive requirements of a permit must be met. The procedural requirements of the following state laws are exempted:

- Ch. 70.94 RCW, Washington Clean Air Act;
- Ch. 70.95 RCW, Solid Waste Management, Reduction, and Recycling;
- Ch. 70.105 RCW, Hazardous Waste Management;
- Ch. 75.20 RCW, Construction Projects in State Waters;
- Ch. 90.48 RCW, Water Pollution Control; and
- Ch. 90.58 RCW, Shoreline Management Act of 1971.

WAC 173-340-710(4) sets forth the criteria that Ecology evaluates when determining whether certain requirements are relevant and appropriate for a cleanup action. Table 3 lists state and federal laws that contain the applicable or relevant and appropriate requirements that may apply to the cleanup action at Priceless Gas. Local laws, which may be more stringent than specified state and federal laws, will govern where applicable.

5.3.6 Terrestrial Ecological Evaluation

The Terrestrial Ecological Evaluation (TEE) process defined in the MTCA Cleanup Regulation may be used to determine whether the cleanup action is protective of the environment. The requirements and procedures for conducting a TEE are set forth in WAC 173-340-7490 through WAC 173-340-7494. Some sites are excluded from conducting a TEE under the provisions of WAC 173-340-7491. The Priceless Gas site is excluded from this evaluation process as there is"...less than one-and-a-half acres of contiguous undeveloped land on or within 500 feet of any area of the site" [WAC 173-340-7491 (1) (c)].

5.4 EVALUATION OF CLEANUP ACTION ALTERNATIVES

Ecology has applied the regulatory requirements and guidelines outlined in Section 5.3 to conduct a comparative evaluation of the cleanup alternatives and to select the most appropriate cleanup action.

5.4.1 Threshold Requirements

5.4.1.1 Protection of Human Health and the Environment

Direct contact with or ingestion of contaminated water or soils and the inhalation of fugitive volatile organic vapors are the major potential routes of exposure. The potential for exposure to impacted shallow soils and groundwater has been mitigated by the excavation of most of the shallow contaminated soils.

Each of the five considered alternatives includes these additional mitigation measures:

- **Institutional Controls** - A restrictive covenant will become appurtenant to the property. The restrictive covenant will, in part, provide for the maintenance of institutional controls that will minimize the potential for incidental exposure to contaminated soils and groundwater. The institutional controls will include restricting site activities. The restrictive covenant will remain in place until it is demonstrated, through sampling, that the soils and groundwater at this site have met established cleanup levels.

- **Site grading and compaction of surface soils;**

- **Recovery of free phase product at MW-3;**

- **Groundwater Monitoring** – Quarterly groundwater monitoring will include the sampling and analysis of previously identified points-of-compliance as well as

additional performance monitoring points. Performance monitoring will be accomplished through the sampling of MW- 4, MW-5, MW-7, MW-8, MW-9 and MW-10. Groundwater monitoring will continue until compliance with the established cleanup levels is demonstrated for four (4) consecutive quarterly sampling events. Groundwater monitoring will be conducted in a manner consistent with the MTCA provisions for compliance monitoring described in WAC 173-340-720 (9).

Each of these remedial actions is considered essential elements to an effective cleanup of the site. In addition:

- **Periodic Review** - WAC 173-340-420 states that at sites where a cleanup action requires an institutional control, a periodic review shall be completed no less frequently than every five years after the initiation of a cleanup action. Since institutional controls will be required, five-year reviews shall take place at this Site. Groundwater monitoring data shall be reviewed to continue to assess the effectiveness of the cleanup actions. If concentrations of contaminants in groundwater are not decreasing, then further remedial action will be considered.

Alternatives 2, 3, 4 and 5 include:

- Removal of additional contaminated soils associated with construction activities;

The removal and off-site treatment of contaminated soils is cost effective and provides immediate environmental benefits.

Alternatives 2 and 4 include:

- Eliminating the basement in the adjacent residence (the Dehn residence);

Eliminating the basement may provide a measure of protectiveness to the single residence. However, it is not clear that this action would provide any meaningful benefit beyond that provided by the other proposed cleanup strategies. The elimination of the basement would add a disproportionate cost to the project relative to any additional environmental benefit.

In addition, Alternatives 3, 4 and 5 include:

- The installation of a groundwater treatment trench at the north end of the Site. Treatment would include air sparging of the groundwater and soil vapor extraction of the soils within the unsaturated (vadose) zone. The effectiveness of this groundwater treatment trench may be enhanced by an east/west oriented groundwater collection system extending out from the trench.

This treatment system would greatly enhance the protectiveness of the cleanup at this site. It would establish a hydraulic control mechanism, provide a means to treat groundwater, enhance bioremediation and would serve to inhibit the off-site migration of contaminants.

In addition, Alternative 5 includes:

- The installation of a subsurface drainage system extending from the south site boundary, in the area of MW-3, to the proposed groundwater treatment trench along the north property boundary.

There does not appear to be a significant benefit in adding this feature to the cleanup strategy. It would also introduce a disproportionate cost element as this drainage system would frequently overwhelm the proposed groundwater treatment trench and necessitate the pumping, treatment and discharge of the excess water flowing into the system. A similar but more practical feature is a subsurface drainage pipe extending westward from the treatment trench. This would serve to complete the interception and treatment of groundwater before it leaves the site. It would introduce a more manageable quantity of additional water to the proposed treatment trench and add minimally to the cost of the implementation, operation and maintenance of the system.

Alternatives 3, 4 and 5 are the most protective of human health and the environment.

5.4.1.2 Compliance with Cleanup Standards

Alternative 3, 4, and 5 achieve soil and groundwater cleanup standards through soil removal, on-site treatment and enhanced natural attenuation. The cleanup actions described by these cleanup alternatives are more aggressive than those proposed under Alternatives 1 and 2. Alternatives 3, 4 and 5 are far more likely to achieve compliance with the regulatory compliance standards described under WAC 173-340-700 through 173-340-760.

5.4.1.3 Compliance with State and Federal Laws

Each of the proposed cleanup alternatives will comply with the substantive requirements of all applicable state and federal laws as provided for under WAC 173-340-710 (9).

5.4.1.4 Provision for Compliance Monitoring

Compliance monitoring is an element of each of the proposed cleanup action alternatives. A detailed sampling and analysis plan will be prepared and implemented for this purpose.

5.4.2 Other Requirements

5.4.2.1 The Use of Permanent Solutions to the Maximum Extent Practicable

Alternatives 3, 4 and 5 describe permanent groundwater cleanup actions. The actions proposed under each of these alternatives represent the maximum practicable use of available technologies and are most likely to constitute a permanent cleanup action as described under WAC 173-340-360.

Alternatives 1 and 2 are significantly less likely to constitute a permanent solution to the cleanup issues associated with this site.

Use of Permanent Solutions to the Maximum Extent Practicable

As discussed previously, to determine whether a cleanup action uses permanent solutions to the maximum extent practicable, the disproportionate cost analysis specified in the regulation is used. The analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors. The comparison of costs and benefits may be quantitative, but will often be qualitative and require the use of best professional judgment.

Costs are disproportionate to the benefits if the incremental costs are disproportionate to the incremental benefits. Based on the analysis described below, it has been determined that Alternatives 3, 4 and 5 use permanent solutions to the maximum extent practicable.

The costs associated with the elimination of the residential basement described in Alternatives 2 and 4 are disproportionate to the incremental benefits of that action. The cost of Alternative 5 is less than Alternative 4 and provides a similar level of protection for human health and the environment.

- ***Protectiveness***

  Overall protectiveness addresses:

  - The degree to which existing risks are reduced;
  - Time required to reduce risk at the facility and attain cleanup standards;
  - On-site and off-site risks resulting from implementing the alternative, and
  - Improvement of the overall environmental quality.

  Alternatives 3, 4 and 5 will achieve groundwater cleanup standards within a reasonable restoration time frame. Each of the alternatives involve similar and acceptable levels of on-site and off-site risk during the implementation phase. Alternatives 3, 4 and 5 offer equivalent improvements in overall environmental quality.

- *Permanent Reduction of Toxicity, Mobility and Volume*

Each of the proposed cleanup alternatives would likely provide a permanent reduction in toxicity, mobility and volume of hazardous substances. Each of the alternatives, excepting Alternative 1, provide for the removal of impacted soils. This action will accomplish an immediate reduction in the volume of contaminants affecting groundwater at the Site.

Each of Alternatives 3 through 5 proposes an in-situ groundwater treatment system and hydraulic controls. The cleanup alternatives incorporating this groundwater treatment system provide the greatest degree of permanence and overall protectiveness to human health and the environment.

- ***Cost of Implementation***

The costs of Alternatives 3 through 5 are highest primarily due to the added costs of installing and maintaining the groundwater treatment system. Alternative 4 includes the costs for eliminating the residential basement while Alternative 5 includes the added costs associated with a subsurface drainage control system extending from MW-3 to the treatment trench at the north property boundary.

- ***Long-Term Effectiveness***

Long-term effectiveness addresses the following:

- degree of certainty that the alternative will be successful;
- long-term reliability, magnitude of residual risk and
- effectiveness of management controls.

Alternatives 3, 4 and 5 offer the highest degree of confidence for success. These alternatives most effectively manage the remaining risks associated with the site and provide important controls by the installation of a groundwater treatment system.

- *Management of Short-Term Risks*

Short -term risks are those concerns associated with the protection of human health and the environment during construction and implementation activities. The short-term risks can be adequately addressed for each of the cleanup alternatives.

- *Technical and Administrative Implementability*

Each of the cleanup alternatives could be implemented quickly and effectively. However, the task of eliminating the residential basement as proposed by Alternatives

2 and 4 could be problematic in that it would involve a substantial remodeling of the house, the relocation of essential utilities and mechanicals and potentially significant engineering challenges.

5.4.2.2 Provide for a Reasonable Restoration Time Frame

The restoration time frame for the each of the cleanup action alternatives will likely extend for several years. Alternatives 3, 4 and 5 present the most effective cleanup actions in terms of a reaching the cleanup goals in a timely manner. It is not clear that any additional technology, or strategy, short of a complete excavation to bedrock across the affected area, would provide an appreciably quicker cleanup.

Throughout the restoration time frame, cleanup action Alternatives 3, 4 and 5 effectively limit the potential for any additional environmental impacts and provide safeguards to prevent direct human exposure.

Alternatives 1 and 2 would significantly extend the time required to reach cleanup levels. The restoration time frames associated with Alternatives 1 and 2 would likely not be reasonable, particularly since these alternatives exclude readily available and practicable remedial actions.

5.4.2.3 Consideration of Public Concerns

A public comment period for this document provided the opportunity for interested parties to consider and comment on the proposed Cleanup Action Plan. No substantitive comments were received. One letter of encouragement was received and acknowledged by Ecology.

5.5 DECISION

Based on the above analysis, Alternative 3 has been selected as the appropriate final cleanup action for the former Corner Express Site. This proposed cleanup action meets each of the requirements for cleanup action selection as provided for under MTCA.

Alternative 3 meets each of the threshold requirements. This alternative uses permanent solutions to the maximum extent practicable. The cost of Alternative 3 is less than Alternatives 4 or 5 and provides a similar level of protection for human health and the environment.

In summary the selected final cleanup action for this Site consists of the following elements:

- Soil removal (associated with construction); site grading/compaction;
- Product recovery sump at MW-3;
- Groundwater treatment (within trench along north property boundary)
- Backfilling of excavated areas with appropriate materials;
- Quarterly sampling and analysis of groundwater monitoring wells designated as points of compliance or performance monitoring points;
- Institutional controls - a restrictive covenant will be placed on the deed of this property to ensure that the potential exposure risk to contaminated soils is known and that site activities are considerate of these potential risks. The restrictive covenant will be removed when it has been demonstrated through sampling that soil and groundwater cleanup levels have been attained.

6.0 SELECTED REFERENCES

Budinger and Associates, 2002, Remedial Investigation /Feasibility Study – Corner Express

Budinger and Associates, 2001, UST Site Assessment and Preliminary Site Characterization – Corner Express

TechCon, 2001, UST Site Check, Product Line Draining and Tank Cleaning Report – Corner Express

Sheila Pachernegg, 2001, Remedial Investigation /Feasibility Study – Priceless Gas

Required Element	Location
(i) A general description of the proposed cleanup action developed in accordance with WAC 173-340-350 through -390.	Section 5.0
(ii) A summary of the rationale for selecting the proposed alternative.	Section 5.5
(iii) A brief summary of other cleanup action alternatives evaluated in the remedial investigation/feasibility study.	Section 5.2
(iv) Cleanup standards and, where applicable, remediation levels for each hazardous substance and for each medium of concern at the site.	Section 4.2
(v) The schedule for implementation of the cleanup action plan including, if known, restoration time frame.	Section 5.4.2
(vi) Institutional controls, if any, required as a part of the proposed cleanup action.	Section 5.5
(vii) Applicable state and federal laws, if any, for the proposed cleanup action when these are known at this step in the cleanup process. (This does not preclude subsequent identification of applicable state and federal laws).	Section 5.4.1
(viii) A preliminary determination by the department that the proposed cleanup action will comply with WAC 173-340-360.	Section 5.4.2
(ix) Where the cleanup action involves on-site containment, specification of the types, levels, and amounts of hazardous substances remaining on-site and the measures that will be used to prevent migration and contact with those substances.	Section 5.4

TABLE 1. Index of Required Elements of Cleanup Action Plan

CONSTITUENT	GROUNDWATER	SOILS
Benzene	5 ug/l	.03 mg/kg
Toluene	1,000 ug/l	7 mg/kg
Ethylbenzene	700 ug/l	6 mg/kg
Xylenes	1,000 ug/l	9 mg/kg
MTBE	20 ug/l	.10 mg/kg
TPH(G)	800	30 mg/kg
TPH(D)	500 ug/l	2,000 mg/kg

TPH (G): Total Petroleum Hydrocarbons (Gasoline range)
TPH (D): Total Petroleum Hydrocarbons (Diesel range)

Note: Selected cleanup levels are MTCA Method A.

TABLE 2: SELECTED CLEANUP LEVELS

Cleanup Action Implementation	
Ch. 18.104 RCW; Ch. 173-160 WAC	Water Well Construction; Minimum Standards for Construction and Maintenance of Water Wells
Ch. 173-162 WAC	Rules and Regulations Governing the Licensing of Well Contractors and Operators
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
Ch. 43.21C RCW; Ch. 197-11 WAC	State Environmental Policy Act; SEPA Rules
29 CFR 1910	Occupational Safety and Health Act
Groundwater	
33 USC 1251; 40 CFR 131	Clean Water Act of 1977; Water Quality Standards
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
Ch. 173-200 WAC	Water Quality Standards for Ground Waters of the State of WA
Air	
42 USC 7401; 40 CFR 50	Clean Air Act of 1977; National Ambient Air Quality Standards
Ch. 70.94 RCW; Ch. 43.21A RCW; Ch. 173-400 WAC	Washington Clean Air Act; General Regulations for Air Pollution
Ch. 173-460 WAC	Controls for New Sources of Air Pollution
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation

TABLE 3: Applicable or Relevant and Appropriate Requirements for the Selected Cleanup Action